

JC10 Rec'd PCT/PTO 22 JAN 2002

FORM PTO-1390 (REV. 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				3732-0105P	
				U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	
INTERNATIONAL APPLICATION NO.		INTERNATIONAL FILING DATE		PRIORITY DATE CLAIMED	
PCT/FR99/01808		July 22, 1999		NONE	
TITLE OF INVENTION					
ELECTRIC SIGNAL PROCESSING FOR ELECTROACOUSTIC TRANSDUCER					
APPLICANT(S) FOR DO/EO/US					
CHARBONNAUX, Marc; MORCHAIN, Patrice; PICCALUGA, Pierre; PERRICHON, Claude-Annie					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39 (1). 4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31). 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau. WO 01/08446 c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith. b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4) 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)). <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input checked="" type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 					
Items 11. to 20. below concern document(s) or information included:					
<ol style="list-style-type: none"> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98, Form PTO-1449(s), and International Search Report (PCT/ISA/210) with 5 cited document(s). 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. 14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 15. <input type="checkbox"/> A substitute specification. 16. <input type="checkbox"/> A change of power of attorney and/or address letter 17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821-1.825. 18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4). 19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). 20. <input checked="" type="checkbox"/> Other items or information: <ol style="list-style-type: none"> 1.) International Preliminary Examination Report (PCT/IPEA/409) 2.) Form PCT/IB/308 3.) One (1) Sheet of Formal Drawing 					

JC13 Rec'd PCT/PTO 22 JAN 2002

U.S. APPLICATION NO (if known, see 37 CFR 1.5) <div style="font-size: 1.5em; font-weight: bold;">10/031613</div>		INTERNATIONAL APPLICATION NO PCT/FR99/01808		ATTORNEY'S DOCKET NUMBER 3732-0105P	
---	--	--	--	--	--

21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1,040.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO. \$740.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4). \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =	CALCULATIONS PTO USE ONLY																	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	\$	890.00																
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:20%;">CLAIMS</th> <th style="width:20%;">NUMBER FILED</th> <th style="width:20%;">NUMBER EXTRA</th> <th style="width:20%;">RATE</th> </tr> <tr> <td>Total Claims</td> <td>9 - 20 =</td> <td>0</td> <td>X \$18.00</td> </tr> <tr> <td>Independent Claims</td> <td>2 - 3 =</td> <td>0</td> <td>X \$84.00</td> </tr> <tr> <td colspan="3">MULTIPLE DEPENDENT CLAIM(S) (if applicable) None</td> <td>+ \$280.00</td> </tr> </table>	CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	Total Claims	9 - 20 =	0	X \$18.00	Independent Claims	2 - 3 =	0	X \$84.00	MULTIPLE DEPENDENT CLAIM(S) (if applicable) None			+ \$280.00	\$	130.00
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE															
Total Claims	9 - 20 =	0	X \$18.00															
Independent Claims	2 - 3 =	0	X \$84.00															
MULTIPLE DEPENDENT CLAIM(S) (if applicable) None			+ \$280.00															
TOTAL OF ABOVE CALCULATIONS =			\$	1,020.00														
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.			\$	0.00														
SUBTOTAL =			\$	1,020.00														
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).			\$	0.00														
TOTAL NATIONAL FEE =			\$	1,020.00														
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +			\$	0.00														
TOTAL FEES ENCLOSED =			\$	1,020.00														
Amount to be:			\$															
refunded			\$															
charged			\$															

a. ☒ A check in the amount of \$ **1,020.00** to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account. No. _____ in the amount of \$ _____ to cover the above fees.
 A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
 overpayment to Deposit Account No. 02-2448.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

Send all correspondence to:
Birch, Stewart, Kolasch & Birch, LLP or Customer No. 2292
 P.O. Box 747
 Falls Church, VA 22040-0747
 (703) 205-8000

Date: January 22, 2002

By #19382
 Charles Gorenstein, #29,271

PATENT
3732-0105P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: CHARBONNAUX, Marc et al.
Int'l. Appl. No.: PCT/FR99/01808
Appl. No.: New Group:
Filed: January 22, 2002 Examiner:
For: ELECTRIC SIGNAL PROCESSING FOR
ELECTROACOUSTIC TANSDUCER

PRELIMINARY AMENDMENT

BOX PATENT APPLICATION

Assistant Commissioner for Patents
Washington, DC 20231

January 22, 2002

Sir:

The following Preliminary Amendments and Remarks are respectfully submitted in connection with the above-identified application.

AMENDMENTS

IN THE SPECIFICATION:

Please amend the specification as follows:

Before line 1, insert --This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/FR99/01808 which has an International filing date of July 22, 1999, which designated the United States of America.--

IN THE CLAIMS:

Please amend the claims as follows:

4. (Amended) Unit according to claim 2 characterised by embodiments active components.

5. (Amended) Unit according to claim 2 characterised by embodiments of microprocessors.

6. (Amended) Unit according claim 2 characterised by embodiments of future technology.

Please add the following claims:

--7. (NEW) Unit according to claim 3 characterised by embodiments active components.

8. (NEW) Unit according to claim 3 characterised by embodiments of microprocessors.

9. (NEW) Unit according claim 3 characterised by embodiments of future technology.--

REMARKS

The specification has been amended to provide a cross-reference to the previously filed International Application.

The claims have been amended to remove multiple dependencies and claims 7-9 have been added.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #19382
Charles Gorenstein, #29,271

CG/rem
3732-0105P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment: VERSION WITH MARKINGS TO SHOW CHANGES MADE

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The specification has been amended to provide a cross-reference to the previously filed International Application.

IN THE CLAIMS:

The claims have been amended as follows:

4. (Amended) Unit according to [claims 2 and 3] claim 2 characterised by embodiments active components.

5. (Amended) Unit according to [claims 2 and 3] claim 2 characterised by embodiments of microprocessors.

6. (Amended) Unit according [claims 2 and 3] claim 2 characterised by embodiments of future technology.

Claims 7-9 have been added.

1/ptb

WO 01/08446

1

PCT/FR99/01808

ELECTRIC SIGNAL PROCESSING FOR ELECTRO-ACOUSTIC TRANSDUCER

It is common to use electric current filters for electro-acoustic transducers. These filters are usually frequency attenuators the equalizing slope of which is
5 6 dB, 12 dB, 18 dB. Mixers use these more or less sophisticated filters in order to modify the audio bandwave frequencies. On the other hand, it is common to have curves of the electric signal as perfect as possible, i.e. to obtain square wave responses as perfect as possible.

10 It is found in the current technology used that the audio electric signals have excellent pulse response and frequency control quality. With regard to electro-acoustic transducers, the transformation of the electric signal is incorrectly executed by the transducer(s).

15 In fact, the electric pulses are sent at the speed of the electrons whereas the diaphragm and its motor make up an electro-mechanical assembly of a given weight. The weight of this mobile assembly has mechanical inertia preventing an instant response to the electric stresses of the audio signal, thereby creating distortions, even absences of sound as the diaphragm cannot respond simultaneously to all the electrical values.

20 This process enables the original electric pulse to be modified into at least one modulation, pulses, micro electric phase shifts shifting the instant electric pulse into delayed electric micro-pulses. Thus, the starting driving force of the movement on the diaphragm is distributed into a very short time interval so as not to saturate the coil with current, with the motor of the mechanical
25 assembly in movement which can thus absorb, once the acceleration factor is acquired, the rest of the pulse of the original current. These micro-currents are generated by the impedances which crossed by the original electric signal, generate electric oscillations by their counter-electro-driving forces.

The components are parallel mounted over at least two levels.

30 The components, mounted on three parallel levels respond better to electric phase shifting for the electric absorption of the transducers.

The process is therefore the positioning of a self-supplied oscillator, activated by the original audio signal crossing the components making it up to obtain an

oscillated signal of a very low amplitude, of oscillations of very big frequencies. (Fig. 1). This new signal (2) keeps the general aspect of the original signal (1) which is continuously modulated. This parallel mounting process of components of the same type but of different values thus
5 enables a modification of the audio, digital, electro-acoustic transducer supply signal, of at least one acoustic transducer or one acoustic speaker. In fact, this process is placed between an amplifier and an acoustic speaker or a transducer, on the supply line.

This process creates micro interference on the original electric signal which
10 does not change the general curve of the signal at all but which gives an apparently parasitic aspect of the original signal. The components of this process can be electric passive or active components, micro processors, integrated circuits or future technology.

This process is represented by the (Fig. 1) of which the curve 1 of the electric
15 audio signal is modified into curve 2 according to this process which modifies the perfectly smooth signal into at least one rippled signal.

This process has also a unit made up (Fig. 2) of several electric components, in this case wound resistors, parallel mounted. The first channel (1) is made up of at least one component, the second parallel channel (2) is made up of at
20 least one component, in this case, two serial-mounted components. The third channel (3) is also made by at least one electric component, in this case two serial-mounted components. The assembly thus made up is an interface module, energised by the original electric signal, mounted between the amplifier (4) and the acoustic speaker (5). The supply wire (6) of the + taking
25 the interface module of this process. This non-limiting example is made by a person skilled in the art. This unit made up of components of the same type with different values, is mounted on any electric power supply of an acoustic speaker or of at least one electro-acoustic transducer.

This process (fig. 3) is an alternative of the process made up on channel (1)
30 of at least one electric component, on channel (2) of at least one electric component, being in this case two different wound resistors (4,6), respectively 3.3 Ohms and 8.2 Ohms. The channel (3) is made up of a self-inductance coil (5) of 18 turns. All the components in parallel are mounted on the supply of at least one electro-acoustic transducer (8) of a television, linked

to its audio generator (7). The set of values of the components is such that the original, analog or digital audio signal is not altered in its whole by an attenuation of frequency but is subject to micro-oscillations resembling a slight steady interference due to the electric phase shift caused by the components
5 which intervene directly due to their type on the supply current of the electric signal.

This module is an interface unit between an analog or digital audio signal and an electro-acoustic transducer so that it can absorb the electric pulses to be transformed into a mechanical movement more easily (Fig. 3).

10 It is to be pointed out that the module must never make up an attenuation frequency filter of 6 dB or more.

This process and unit are aimed at improving the comfort conditions of electro-acoustic reproduction and the quality of acoustic reproduction which can be used in the sound, audio and audiovisual reproduction field.

CLAIMS

- 1 - Process in the sound reproduction field made up of an oscillator placed on
5 the analog or digital, electric signal power supply of at least one electro-
acoustic transducer, an oscillator which modifies the original electric signal into
at least one oscillating electric signal of very low amplitude and high
frequencies not modifying the general aspect of the original signal, an
oscillator self-supplied by the original signal which crossing the oscillator,
10 modifies the original electric pulse into at least one electric micro-phase shift
pulse.
- 2 - Unit for the reproduction of sound in analog or digital, made up of at least
one electric component per channel on at least two channels in parallel, made
up of passive components of the same type mounted on any electric power
15 supply of at least one electro-acoustic transducer, or acoustic speaker, thus
making up an oscillator creating at least one electric micro-phase shift
modulation of the original electric pulse.
- 3 - Unit according to claim 2 characterised by electric components of different
values.
- 20 4 - Unit according to claims 2 and 3 characterised by embodiments of active
components.
- 5 - Unit according to claims 2 and 3 characterised by embodiments of micro-
processors.
- 25 6 - Unit according to claims 2 and 3 characterised by embodiments of future
technology.

(12) DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITÉ DE COOPÉRATION
EN MATIÈRE DE BREVETS (PCT)

(19) Organisation Mondiale de la Propriété
Intellectuelle
Bureau international



(43) Date de la publication internationale
1 février 2001 (01.02.2001)

PCT

(10) Numéro de publication internationale
WO 01/08446 A1

(51) Classification internationale des brevets²: H04R 3/00

(21) Numéro de la demande internationale:

PCT/FR99/01808

(22) Date de dépôt international: 22 juillet 1999 (22.07.1999)

(25) Langue de dépôt:

français

(26) Langue de publication:

français

(71) Déposant (pour tous les États désignés sauf US): PICA-SOUND INTERNATIONAL [FR/FR]; Maharepa-BP 4, F-98728 Moorea (FR).

(72) Inventeurs; et

(75) Inventeurs/Déposants (pour US seulement): CHARBONNAUX, Marc [FR/FR]; 6, rue Dumenge, F-69004 Lyon (FR). MORCHAIN, Patrice [FR/FR]; 17, allée des Crêtes, F-38080 l'Isle d'Abeau (FR). PICCALUGA, Pierre [FR/FR]; 6, rue des Escoffiers, F-38080 l'Isle d'Abeau (FR). PERRICHON, Claude-Annie [FR/FR]; 6, rue des Escoffiers, F-38080 l'Isle d'Abeau (FR).

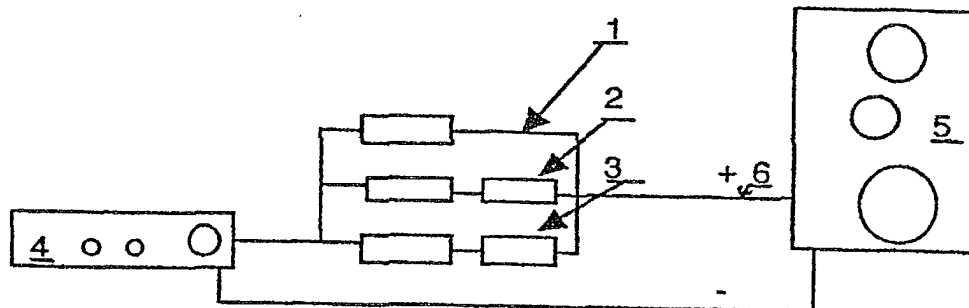
(74) Mandataire: MIZRAHI, Claude; Avocat à la Cour, 1, rue de Chazelles, F-75017 Paris (FR).

(81) États désignés (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,

[Suite sur la page suivante]

(54) Title: ELECTRIC SIGNAL PROCESSING FOR ELECTROACOUSTIC TRANSDUCER

(54) Titre: TRAITEMENT DE SIGNAL ELECTRIQUE POUR TRANSDUCTEUR ELECTROACOUSTIQUE



(57) Abstract: It is usual to utilise electric current filters for electroacoustic transducers, said filters are in general frequency mixers. Audio electric signals have a pulse response quality and excellent frequency adjustment. As for electroacoustic transducers, the transformation is not properly carried out for electroacoustic transducers. The electric pulses travel at the speed of the electrons whereas the membrane and its motor have a specific weight. Said weight has a mechanical inertia preventing an instantaneous response to the electric effects. The invention concerns a method which consists in modifying at least one modulation of the original electric pulse into micro electrical phase shifts. Said micro phase shifts are generated by impedance of the components. An apparatus consists of several components of similar type mounted in parallel, thereby forming a self-powered oscillator, energized by the original electric signal. Said apparatus is mounted on the circuit powering the enclosure.

(57) Abrégé: Il est habituel d'utiliser des filtres de courant électrique pour les transducteurs électro acoustiques, ces filtres sont en général des atténuateurs de fréquence. Les signaux électriques audio ont une qualité en réponse impulsionnelle et régulation de fréquence excellente. En ce qui concerne les transducteurs électro acoustiques, la transformation est mal exécutée par les transducteurs électro acoustiques. En effet les impulsions électriques vont à la vitesse des électrons alors que la membrane et son moteur ont un poids donné. Ce poids a une inertie mécanique empêchant de répondre instantanément aux sollicitations électriques. Le présent procédé modifie au moins une modulation de l'impulsion électrique d'origine en des micro déphasages électriques. Ces micro déphasages sont générés par les impédances des composants. Un appareil est constitué de plusieurs composants de même nature montés en parallèles,

[Suite sur la page suivante]

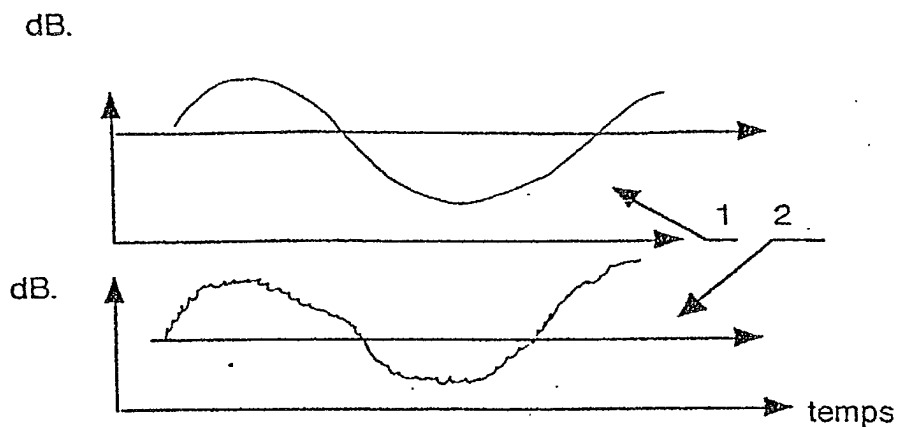


Fig. 1

Fig. 2

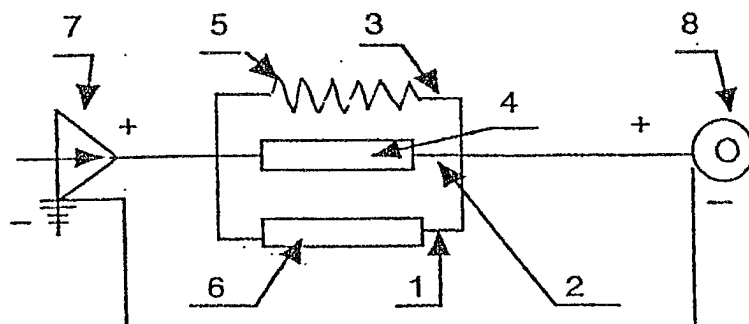
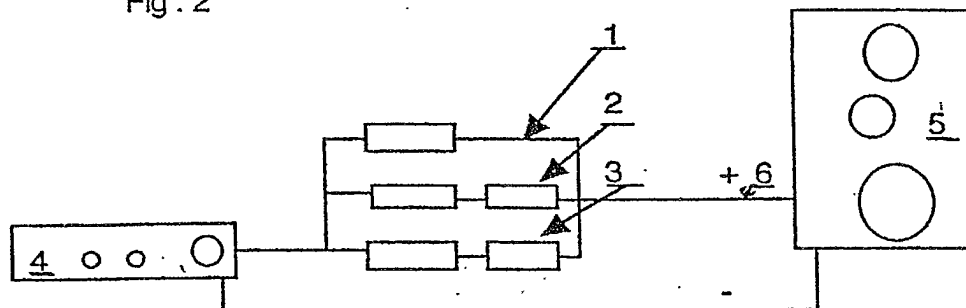


Fig. 3

BIRCH, STEWART, KOLASCH & BIRCH, LLP

P.O. Box 747 • Falls Church, Virginia 22040-0747
Telephone: (703) 205-8000 • Facsimile: (703) 205-8050

PLEASE NOTE:
YOU MUST
COMPLETE THE
FOLLOWING

**COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT AND DESIGN APPLICATIONS**

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated next to my name; that I verily believe that I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Insert Title: ELECRIC SIGNAL PROCESSING FOR ELECTROACOUSTIC TRANSDUCER

Fill in Appropriate Information - For Use Without Specification Attached: the specification of which is attached hereto. If not attached hereto, the specification was filed on January 22, 2002 as United States Application Number 10/031,613 and amended on January 22, 2002 (if applicable) and/or the specification was filed on July 22, 1999 as PCT International Application Number PCT/FR99/01808; and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months (six months for designs) prior to this application, and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)	Priority Claimed
(Number) _____ (Country) _____ (Month/Day/Year Filed) _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number) _____ (Country) _____ (Month/Day/Year Filed) _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number) _____ (Country) _____ (Month/Day/Year Filed) _____	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional applications(s) listed below.

Insert Provisional Application(s): (if any)	(Application Number)	(Filing Date)
	_____	_____
	_____	_____

All Foreign Applications, if any, for any Patent or Inventor's Certificate Filed More than 12 Months (6 Months for Designs) Prior to the Filing Date of This Application:

Country	Application Number	Date of Filing (Month/Day/Year)
_____	_____	_____
_____	_____	_____

I hereby claim the benefit under Title 35, United States Code, §120 of any United States and/or PCT application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States and/or PCT application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Insert Prior U.S. Application(s): (if any)	(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)
	_____	_____	_____
	_____	_____	_____

I hereby appoint the practitioners at CUSTOMER NO. 2292 as my attorneys or agents to prosecute this application and/or an international application based on this application and to transact all business in the United States Patent and Trademark Office connected therewith and in connection with the resulting patent based on instructions received from the entity who first sent the application papers to the practitioners, unless the inventor(s) or assignee provides said practitioners with a written notice to the contrary:

Send Correspondence to:

BIRCH, STEWART, KOLASCH & BIRCH, LLP or **CUSTOMER NO. 2292**
P.O. Box 747 • Falls Church, Virginia 22040-0747
Telephone: (703) 205-8000 • Facsimile: (703) 205-8050

PLEASE NOTE:
YOU MUST
COMPLETE
THE
FOLLOWING:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of First
or Sole Inventor:
Insert Name of
Inventor
Insert Date This
Document is Signed

Insert Residence
Insert Citizenship

Insert Post Office
Address

Full Name of Second
Inventor, if any:
see above

Full Name of Third
Inventor, if any:
see above

Full Name of Fourth
Inventor, if any:
see above

Full Name of Fifth
Inventor, if any:
see above

Full Name of Sixth
Inventor, if any:
see above

GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*
Marc CHARBONNAUX		17 Feb 2002
Residence (City, State & Country)	CITIZENSHIP	
Lyon, France FRX	France	
MAILING ADDRESS (Complete Street Address including City, State & Country)		
6, rue Dumenge, F-69004 Lyon, France		
GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*
Patrice MORCHAIN		17 Feb 2002
Residence (City, State & Country)	CITIZENSHIP	
L'Isle d'Abeau, France FRX	France	
MAILING ADDRESS (Complete Street Address including City, State & Country)		
17, allée des Crêtes, F-38080 L'Isle d'Abeau, France		
GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*
Pierre PICCALUGA		17 Feb 2002
Residence (City, State & Country)	CITIZENSHIP	
L'Isle d'Abeau, France FRX	France	
MAILING ADDRESS (Complete Street Address including City, State & Country)		
6, rue des Escoffiers, F-38080 L'Isle d'Abeau, France		
GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*
Claude-Annie PERRICHON		17 Feb 2002
Residence (City, State & Country)	CITIZENSHIP	
L'Isle d'Abeau, France FRX	France	
MAILING ADDRESS (Complete Street Address including City, State & Country)		
6, rue des Escoffiers, F-38080 L'Isle d'Abeau, France		
GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)	CITIZENSHIP	
MAILING ADDRESS (Complete Street Address including City, State & Country)		
GIVEN NAME/FAMILY NAME	INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)	CITIZENSHIP	
MAILING ADDRESS (Complete Street Address including City, State & Country)		